

Aviso

ECMWF data availability notification system

User workflows

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ECMWF

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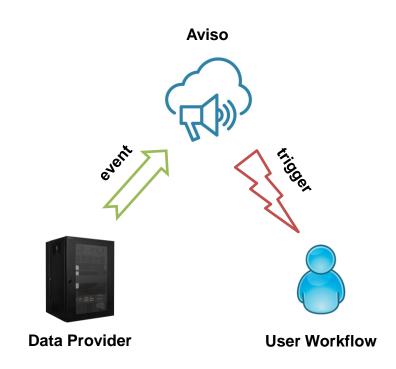
EWCloud Workshop 10-11-2021



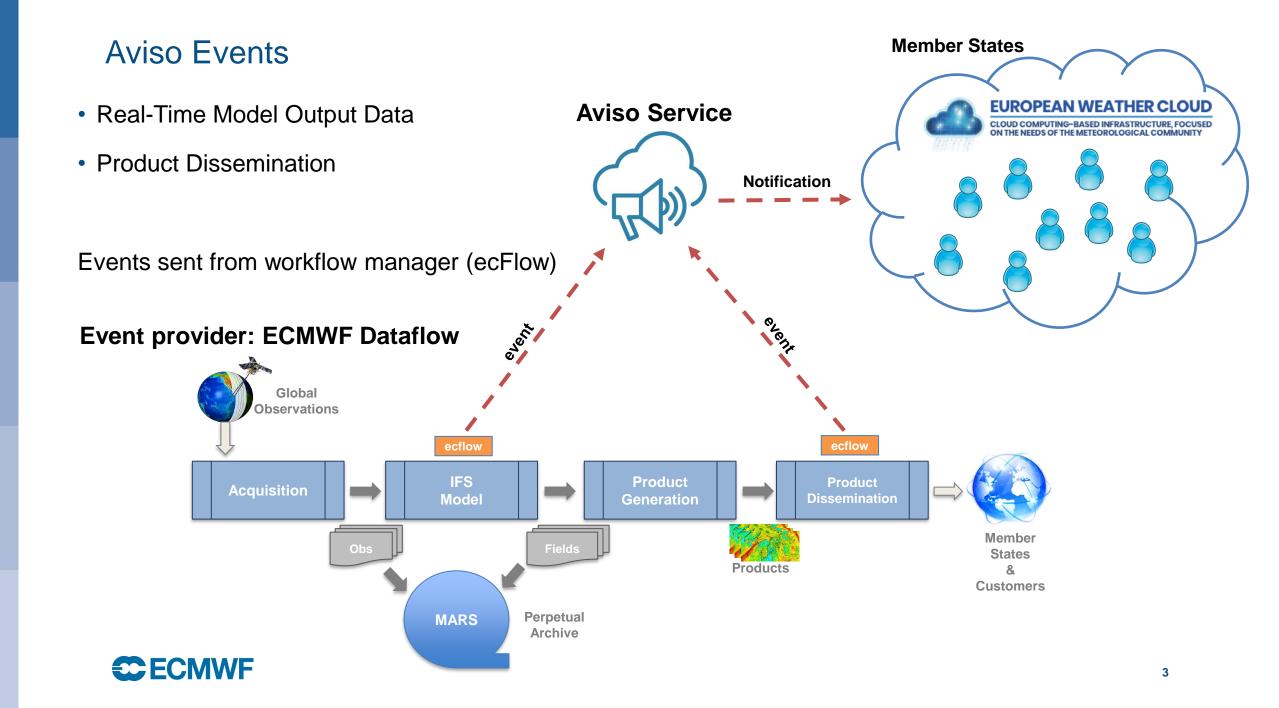
Aviso – Aims

Aviso is a software developed at ECMWF with the aim of:

- Notifying for ECMWF data availability
- Meant for automated systems
- Support When <this> ... Do <that> ...





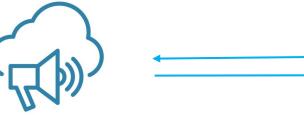


Notification workflow



ECMWF Event Provider e.g. HPC or ECPDS





POST https://aviso.ecmwf.int/api/v1/

Key :ec/diss/foo/E1/od/g/1/enfo/20190810/0/1 Value :s3://storage.ecmwf.europeanweather.cloud/ecpds/E3S1

```
"type" : "aviso",
"specversion": "1.0",
"source": "/ecpds/emos",
"id" : "0c02fdc5-148c-43b5-b2fa-cb1f590369ff",
"datacontenttype" : "application/json",
"data" : {
  "event" : "dissemination",
  "request" : {
    "destination" : "FOO",
    "target": "E1",
    "class": "od",
    "date": "20190810",
    "domain" : "g",
    "expver" : "1",
    "step" : "1",
    "stream" : "enfo",
    "time" : "0" },
  "location": "s3://storage.ecmwf.europeanweath
```



Key-value store







Aviso Client

Request Key Prefix: ec/diss/foo



- Logging
- User workflow





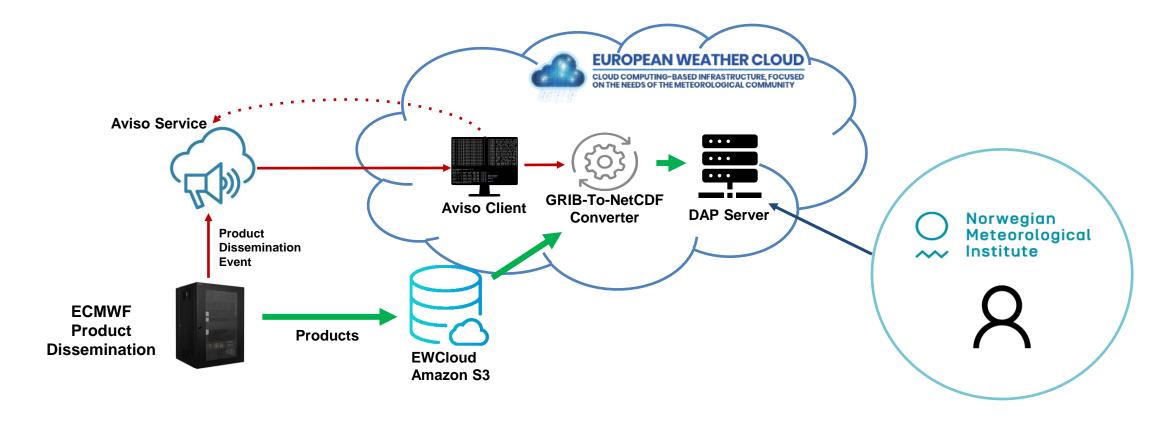
 CloudEvents notification

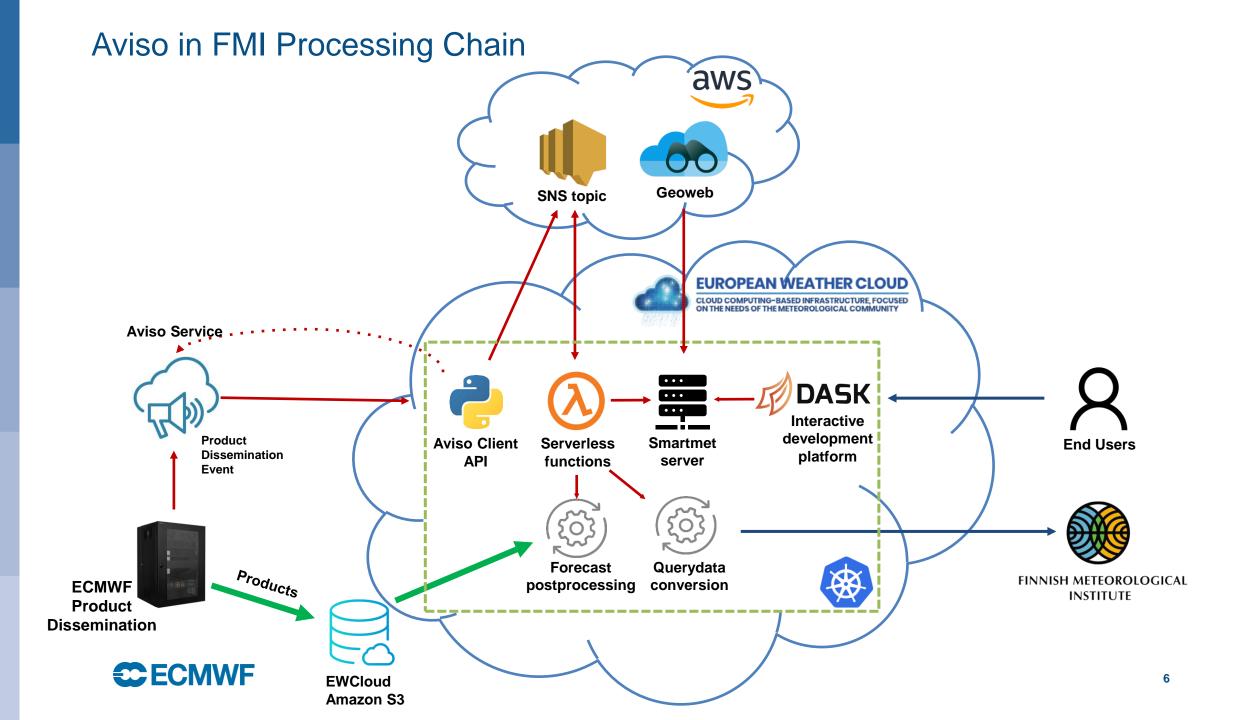




Aviso in MET Norway Processing Chain

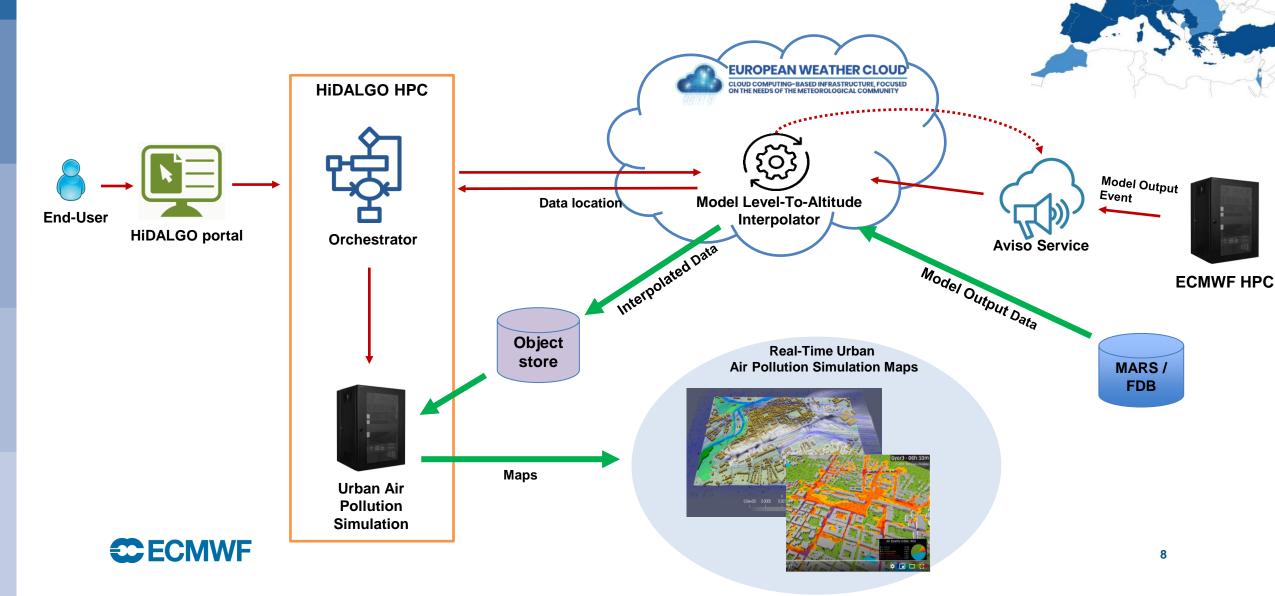
Enabling real-time workflows to speed-up the delivery of derived products to end-users





Aviso in SMHI Processing Chain **Swedish Meteorological** and Hydrological Institute CLOUD COMPUTING-BASED INFRASTRUCTURE, FOCUSED ON THE NEEDS OF THE METEOROLOGICAL COMMUNITY Model output **ECMWF HPC** Post-processing **MARS Archive MARS Event** Aviso Service **Aviso Client Proxy** ecFlow CLOUD COMPUTING-BASED INFRASTRUCTURE, FOCUSED ON THE NEEDS OF THE METEOROLOGICAL COMMUNITY **Product** Dissemination **Event** Post-processing **EWCloud ECMWF Amazon S3 Product Products Dissemination Post-processing ECMWF** SMHI S3

Aviso in EU HiDALGO Urban Air Pollution Pilot Enabling real-time workflows across different data centres



Conclusions

Aviso is a scalable notification system designed for high-throughput

- ECMWF data availability of real-time forecast data or derived products
- Automatic triggering of user-defined workflows
- CloudEvents compliant notifications for interoperability across clouds
 - AWS SNS topic under development

Current status

- Aviso Service is currently pre-operational going to operations in 2022
- ~ 400K notifications a day among real-time and product dissemination
- Beta version released



GitHub github.com/ecmwf/aviso



PyPI pypi.org/project/pyaviso



Read the Docs on <u>pyaviso.readthedocs.io</u>



